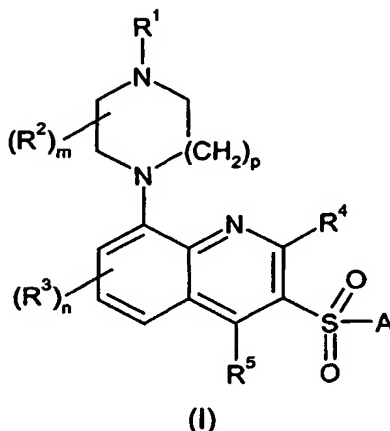


Claims:

1. A compound of formula (I) or a pharmaceutically acceptable salt thereof:



wherein:

- R^1 and R^2 independently represent hydrogen or C_{1-6} alkyl or R^1 is linked to R^2 to form a group $(CH_2)_2$, $(CH_2)_3$ or $(CH_2)_4$;
- 10 R^3 , R^4 and R^5 independently represent hydrogen, halogen, cyano, $-CF_3$, $-CF_3O$, C_{1-6} alkyl, C_{1-6} alkoxy, C_{1-6} alkanoyl or a group $-CONR^6R^7$;
- R^6 and R^7 independently represent hydrogen or C_{1-6} alkyl or together may be fused to form a 5- to 7- membered aromatic or non-aromatic heterocyclic ring optionally interrupted by an O or S atom;
- 15 m represents an integer from 1 to 4, such that when m is an integer greater than 1, two R^2 groups may instead be linked to form a group CH_2 , $(CH_2)_2$ or $(CH_2)_3$;
- n represents an integer from 1 to 3;
- p represents 1 or 2;
- A represents a group $-Ar^1$ or $-Ar^2Ar^3$;
- 20 Ar^1 , Ar^2 and Ar^3 independently represent an aryl group or a heteroaryl group, both of which may be optionally substituted by one or more substituents which may be the same or different, and which are selected from the group consisting of halogen, hydroxy, cyano, nitro, trifluoromethyl, trifluoromethoxy, C_{1-6} alkyl, trifluoromethanesulfonyloxy, pentafluoroethyl, C_{1-6} alkoxy, aryl C_{1-6} alkoxy, C_{1-6} alkylthio, C_{1-6} alkoxy C_{1-6} alkyl, C_{3-7}
- 25 cycloalkyl C_{1-6} alkoxy, C_{1-6} alkanoyl, C_{1-6} alkoxycarbonyl, C_{1-6} alkylsulfonyl, C_{1-6} alkylsulfinyl, C_{1-6} alkylsulfonyloxy, C_{1-6} alkylsulfonyl C_{1-6} alkyl, arylsulfonyl, arylsulfonyloxy, arylsulfonyl C_{1-6} alkyl, C_{1-6} alkylsulfonamido, C_{1-6} alkylamido, C_{1-6} alkylsulfonamido C_{1-6} alkyl, C_{1-6} alkylamido C_{1-6} alkyl, arylsulfonamido, arylcarboxamido, arylsulfonamido C_{1-6} alkyl, arylcarboxamido C_{1-6} alkyl, aroyl, aroyl C_{1-6} alkyl, aryl C_{1-6} alkanoyl, or a group
- 30 $CONR^8R^9$ or $SO_2NR^8R^9$, wherein R^8 and R^9 independently represent hydrogen or C_{1-6} alkyl or together may be fused to form a 5- to 7- membered aromatic or non-aromatic heterocyclic ring optionally interrupted by an O or S atom; or solvates thereof.

2. A compound of formula (I) as defined in claim 1 wherein R¹ represents hydrogen, methyl, ethyl, isopropyl, isobutyl or 2,2-dimethylpropyl.
3. A compound of formula (I) as defined in claim 2 wherein R¹ represents hydrogen.
- 5 4. A compound of formula (I) as defined in any one of claims 1 to 3 wherein R² represents hydrogen, methyl or is linked to R¹ to form a (CH₂)₃ group.
- 10 5. A compound of formula (I) as defined in claim 4 wherein R² represents hydrogen.
6. A compound of formula (I) as defined in any one of claims 1 to 5 wherein R³ represents hydrogen, methyl or halogen.
- 15 7. A compound of formula (I) as defined in claim 6 wherein R³ represents hydrogen.
8. A compound of formula (I) as defined in any one of claims 1 to 7 wherein R⁴ and R⁵ independently represent hydrogen or methyl.
- 20 9. A compound of formula (I) as defined in claim 8 wherein R⁴ and R⁵ both represent hydrogen.
10. A compound of formula (I) as defined in any one of claims 1 to 9 wherein n represents 1.
- 25 11. A compound of formula (I) as defined in any one of claims 1 to 10 wherein m and p independently represent 1 or 2.
12. A compound of formula (I) as defined in claim 11 wherein m and p both represent 1.
- 30 13. A compound of formula (I) as defined in any one of claims 1 to 12 wherein A represents a group -Ar¹.
- 35 14. A compound of formula (I) as defined in claim 13 wherein Ar¹ represents phenyl optionally substituted with halogen, C₁₋₆ alkyl, C₁₋₆ alkoxy, trifluoromethyl or trifluoromethoxy.
- 40 15. A compound of formula (I) as defined in claim 13 or claim 14 wherein Ar¹ represents unsubstituted phenyl.
16. A compound of formula (I) according to claim 1 which is

- 8-(4-Methyl-piperazin-1-yl)-3-phenylsulfonylquinoline;
3-(2-Chloro)phenylsulfonyl-8-piperazin-1-yl-quinoline;
3-(3-Chloro)phenylsulfonyl-8-piperazin-1-yl-quinoline;
3-(2-Fluoro)phenylsulfonyl-8-piperazin-1-yl-quinoline;
5 3-(4-Chloro)phenylsulfonyl-8-piperazin-1-yl-quinoline;
3-(3-Fluoro)phenylsulfonyl-8-piperazin-1-yl-quinoline;
3-(4-Bromo-2-trifluoromethoxy)phenylsulfonyl-8-piperazin-1-yl-quinoline;
8-Piperazin-1-yl-3-(3-trifluoromethyl)phenylsulfonylquinoline;
7-Chloro-3-phenylsulfonyl-8-piperazin-1-yl-quinoline;
10 6-Methyl-3-phenylsulfonyl-8-piperazin-1-yl-quinoline;
(R)-8-(3-Methyl)piperazin-1-yl-3-phenylsulfonylquinoline;
(S)-8-(3-Methyl)piperazin-1-yl-3-phenylsulfonylquinoline;
8-Homopiperazin-1-yl-3-phenylsulfonylquinoline;
8-((S)-2-Methyl-piperazin-1-yl)-3-phenylsulfonyl-quinoline;
15 8-(4-Ethyl-piperazin-1-yl)-3-phenylsulfonylquinoline;
8-Piperazin-1-yl-3-(toluene-2-sulfonyl)-quinoline;
3-(2-Methoxy-benzenesulfonyl)-8-piperazin-1-yl-quinoline;
8-Piperazin-1-yl-3-(toluene-4-sulfonyl)-quinoline;
3-(4-Fluoro-benzenesulfonyl)-8-piperazin-1-yl-quinoline;
3-(2-Trifluoromethyl-benzenesulfonyl)-8-piperazin-1-yl-quinoline;
8-(4-Methyl-piperazin-1-yl)-3-(toluene-2-sulfonyl)-quinoline;
3-(2-Methoxy-benzenesulfonyl)-8-(4-methyl-piperazin-1-yl)-quinoline;
8-(4-Methyl-piperazin-1-yl)-3-(toluene-4-sulfonyl)-quinoline;
3-(4-Fluoro-benzenesulfonyl)-8-(4-methyl-piperazin-1-yl)-quinoline;
25 3-(3-Fluoro-benzenesulfonyl)-8-(4-methyl-piperazin-1-yl)-quinoline;
3-(2-Fluoro-benzenesulfonyl)-8-(4-methyl-piperazin-1-yl)-quinoline;
3-(4-Chloro-benzenesulfonyl)-8-(4-methyl-piperazin-1-yl)-quinoline;
3-(3-Chloro-benzenesulfonyl)-8-(4-methyl-piperazin-1-yl)-quinoline;
3-(2-Trifluoromethyl-benzenesulfonyl)-8-(4-methyl-piperazin-1-yl)-quinoline;
30 8-((S)-3-Methyl-piperazin-1-yl)-3-(toluene-2-sulfonyl)-quinoline;
3-(2-Methoxy-benzenesulfonyl)-8-((S)-3-methyl-piperazin-1-yl)-quinoline;
8-((S)-3-Methyl-piperazin-1-yl)-3-(toluene-4-sulfonyl)-quinoline;
3-(4-Fluoro-benzenesulfonyl)-8-((S)-3-methyl-piperazin-1-yl)-quinoline;
3-(3-Fluoro-benzenesulfonyl)-8-((S)-3-methyl-piperazin-1-yl)-quinoline;
35 3-(2-Fluoro-benzenesulfonyl)-8-((S)-3-methyl-piperazin-1-yl)-quinoline;
3-(4-Chloro-benzenesulfonyl)-8-((S)-3-methyl-piperazin-1-yl)-quinoline;
3-(3-Chloro-benzenesulfonyl)-8-((S)-3-methyl-piperazin-1-yl)-quinoline;
3-(3-Trifluoromethyl-benzenesulfonyl)-8-((S)-3-methyl-piperazin-1-yl)-quinoline;
3-Benzenesulfonyl-8-((R)-2-methyl-piperazin-1-yl)-quinoline;
40 3-Benzenesulfonyl-8-((2R,5S)-2,5-dimethyl-piperazin-1-yl)-quinoline racemate;
3-Benzenesulfonyl-8-(3,3-dimethyl-piperazin-1-yl)-quinoline;
3-Benzenesulfonyl-8-(hexahydro-pyrrolo[1,2-a]pyrazin-2-yl)-quinoline racemate;

3-Benzenesulfonyl-8-(4-isopropyl-piperazin-1-yl)-quinoline;
 3-Benzenesulfonyl-8-(4-isobutyl-piperazin-1-yl)-quinoline;
 3-Benzenesulfonyl-8-[4-(2,2-dimethyl-propyl)-piperazin-1-yl]-quinoline;
 3-Benzenesulfonyl-8-((R)-3,4-dimethyl-piperazin-1-yl)-quinoline;
 5 3-Benzenesulfonyl-8-((S)-3,4-dimethyl-piperazin-1-yl)-quinoline;
 3-Phenylsulfonyl 8-({1S, 4S} 2,5-diazabicycloheptan-2-yl) quinoline;
 or a pharmaceutically acceptable salt thereof.

17. A compound of formula (I) according to claim 1 which is 3-phenylsulfonyl-8-
 10 piperazin-1-yl-quinoline or a pharmaceutically acceptable salt thereof.

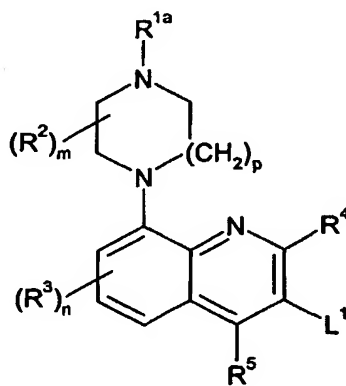
18. A compound of formula (I) according to claim 17 which is the free base of 3-phenylsulfonyl-8-piperazin-1-yl-quinoline.

15 19. A compound of formula (I) according to claim 18 which is 3-phenylsulfonyl-8-piperazin-1-yl-quinoline (Form I).

20. A compound of formula (I) according to claim 18 which is 3-phenylsulfonyl-8-piperazin-1-yl-quinoline (Form II).

20 21. A process for the preparation of a compound of formula (I) as defined in any one of claims 1 to 20 or a pharmaceutically acceptable salt thereof, which comprises:

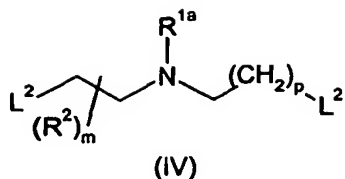
25 (a) reacting a compound of formula (II)



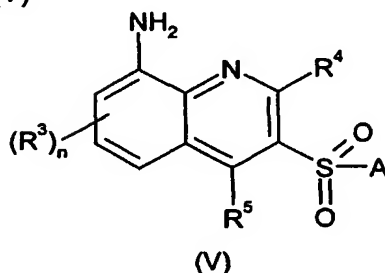
(II)

wherein R^{1a} is as defined for R¹ in claim 1 or an N-protecting group, R², R³, R⁴, R⁵, m, n and p are as defined in claim 1 and L¹ is a leaving group;
 30 with a compound of formula A-SO₂H, (or A-SH followed by a subsequent oxidation step) wherein A is as defined above and thereafter as necessary removing an R^{1a} N-protecting group; or

(b) reacting a compound of formula (IV)

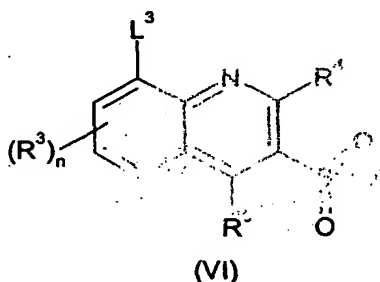


with a compound of formula (V)



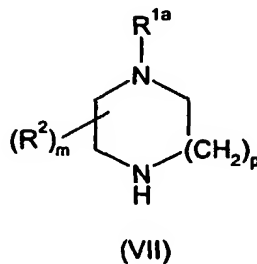
wherein R^{1a} , R^2 , R^3 , R^4 , R^5 , A , m , n and p are as defined in claim 1, and L^2 represents a
 5 suitable leaving group, and thereafter as necessary removing an R^{1a} N -protecting group;
 or

(c) reacting a compound of formula (VI)



10

with a compound of formula (VII)



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wherein R^{1a} , R^2 , R^3 , R^4 , R^5 , m , n , p and A are as defined in claim 1 and L^3 represents a
 suitable leaving group, and thereafter as necessary removing an R^{1a} N -protecting group;
 or

(d) deprotecting a compound of formula (I) which is protected; and thereafter
 optionally

20

(e) interconversion to other compounds of formula (I) and/or forming a
 pharmaceutically acceptable salt and/or solvate.

22. A pharmaceutical composition which comprises a compound according to any one of claims 1 to 20 and a pharmaceutically acceptable carrier or excipient.

5 23. A compound according to any one of claims 1 to 20 for use in therapy.

24. A compound according to any one of claims 1 to 20 for use in the treatment of depression, anxiety, Alzheimers disease, age related cognitive decline, ADHD, obesity, mild cognitive impairment, schizophrenia, cognitive deficits in schizophrenia and stroke.

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25. The use of a compound of formula (I) as defined in any one of claims 1 to 20 or a pharmaceutically acceptable salt thereof in the manufacture of a medicament for the treatment or prophylaxis of depression, anxiety, Alzheimers disease, age related cognitive decline, ADHD, obesity, mild cognitive impairment, schizophrenia, cognitive deficits in schizophrenia and stroke.

15

26. A pharmaceutical composition comprising a compound of formula (I) as defined in any one of claims 1 to 20 for use in the treatment of depression, anxiety, Alzheimers disease, age related cognitive decline, ADHD, obesity, mild cognitive impairment, schizophrenia, cognitive deficits in schizophrenia and stroke.

20

27. A method of treating depression, anxiety, Alzheimers disease, age related cognitive decline, ADHD, obesity, mild cognitive impairment, schizophrenia, cognitive deficits in schizophrenia and stroke which comprises administering a safe and therapeutically effective amount to a patient in need thereof of a compound of formula (I) as defined in any one of claims 1 to 20 or a pharmaceutically acceptable salt thereof.

25

28. A method of promoting neuronal growth within the central nervous system of a mammal which comprises the step of administering a compound of formula (I) as defined in any one of claims 1 to 20 or a pharmaceutically acceptable salt thereof.

30

29. Use of a compound of formula (I) as defined in any one of claims 1 to 20 in the manufacture of a medicament for promoting neuronal growth within the central nervous system of a mammal

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30. A pharmaceutical composition comprising a compound of formula (I) as defined in any one of claims 1 to 20 for use in promoting neuronal growth within the central nervous system of a mammal.

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